

FIG. 1 (Prior Art)

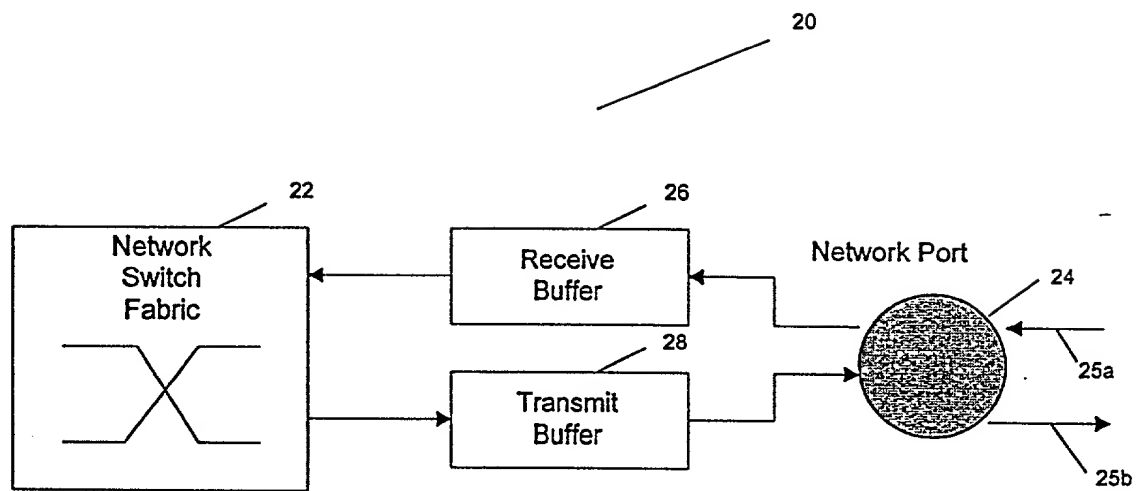


FIG. 2 (Prior Art)

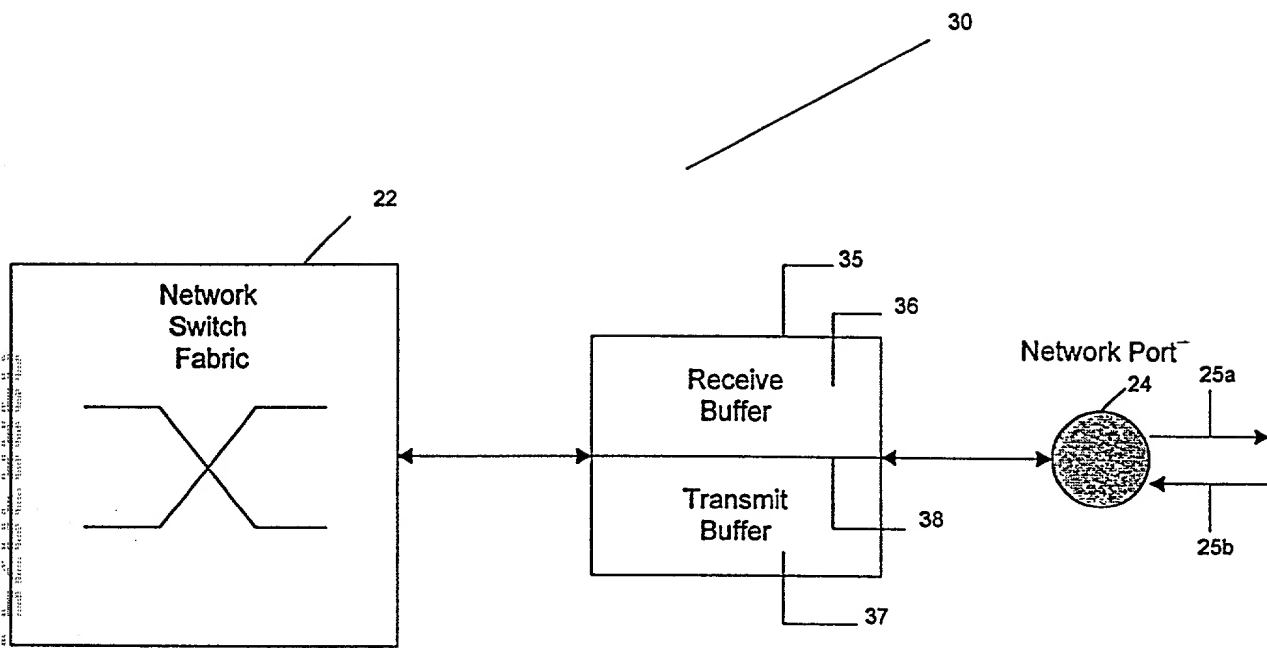


FIG. 3 (Prior Art)

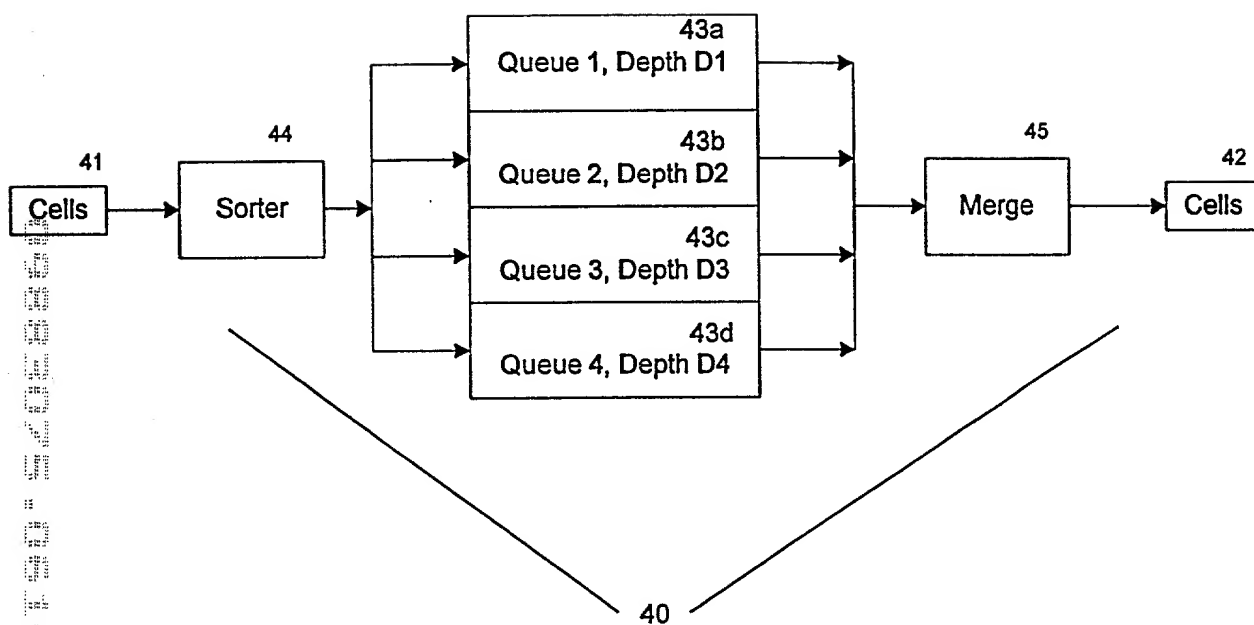


FIG. 4

50

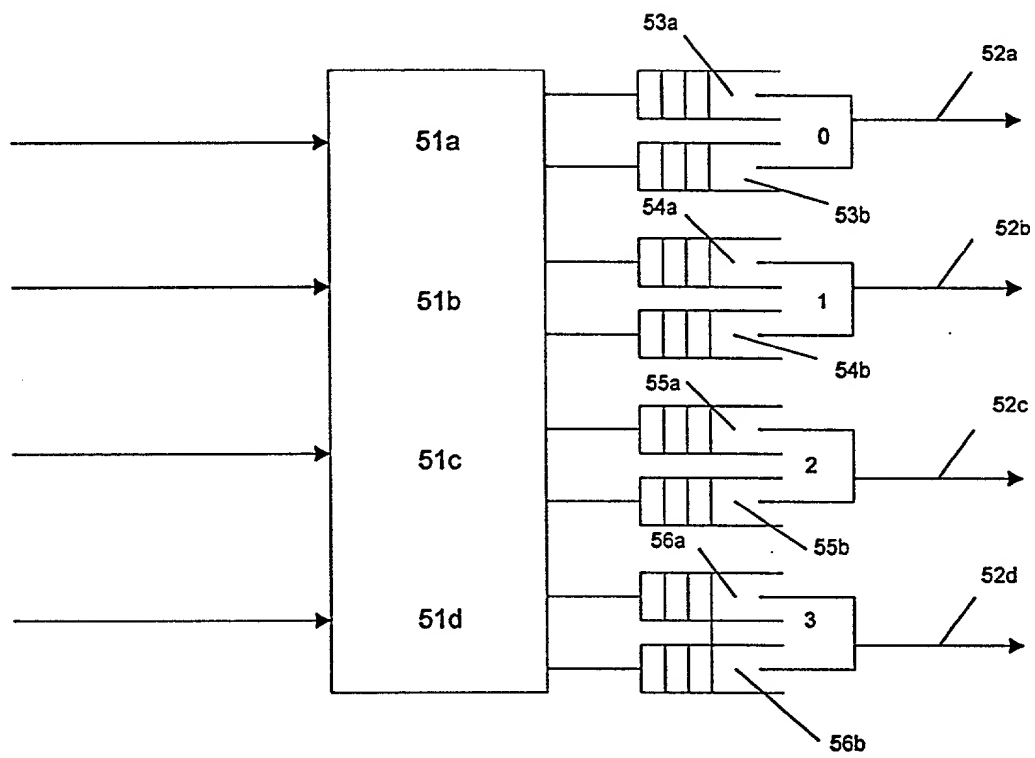


FIG. 5

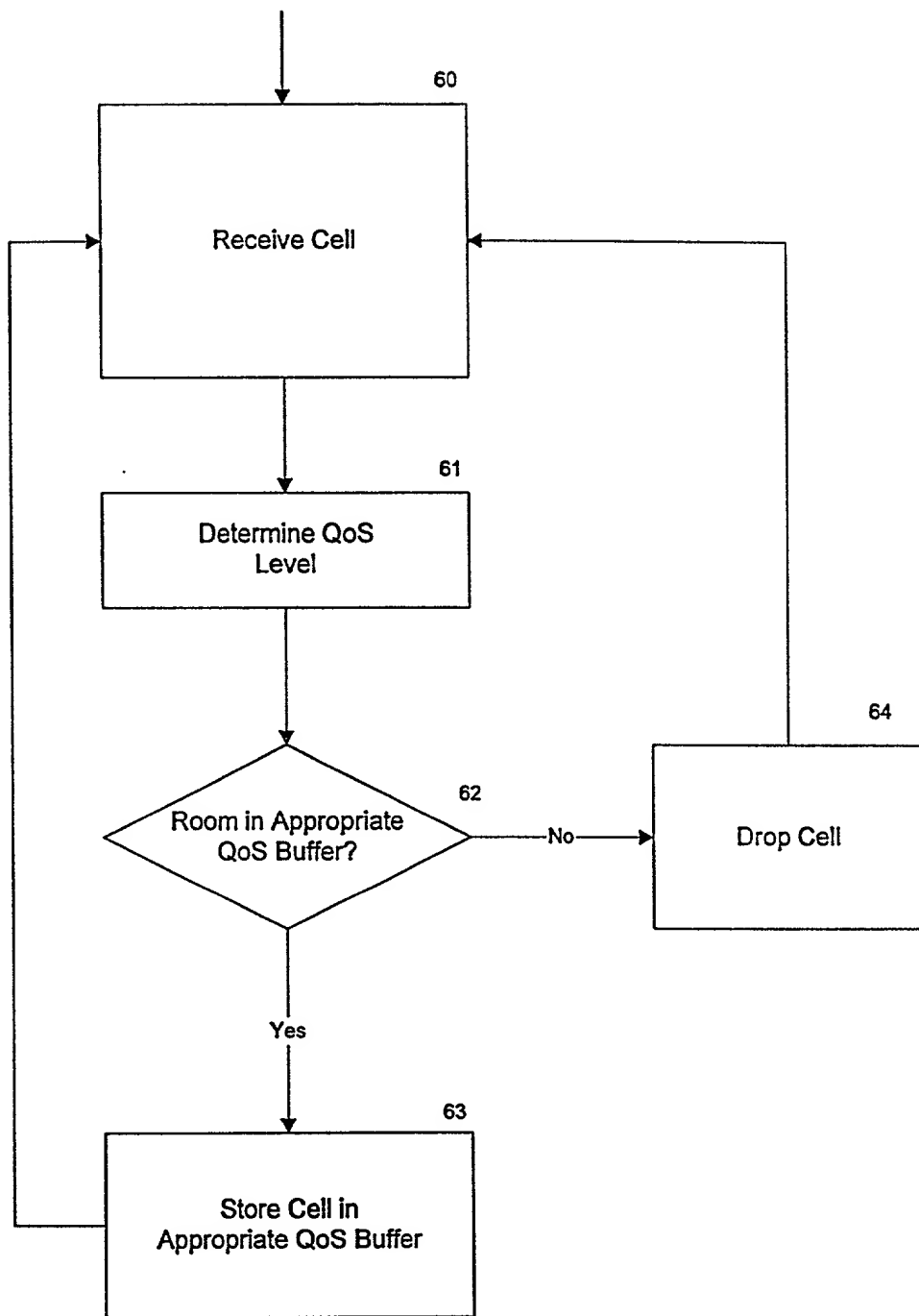


FIG. 6

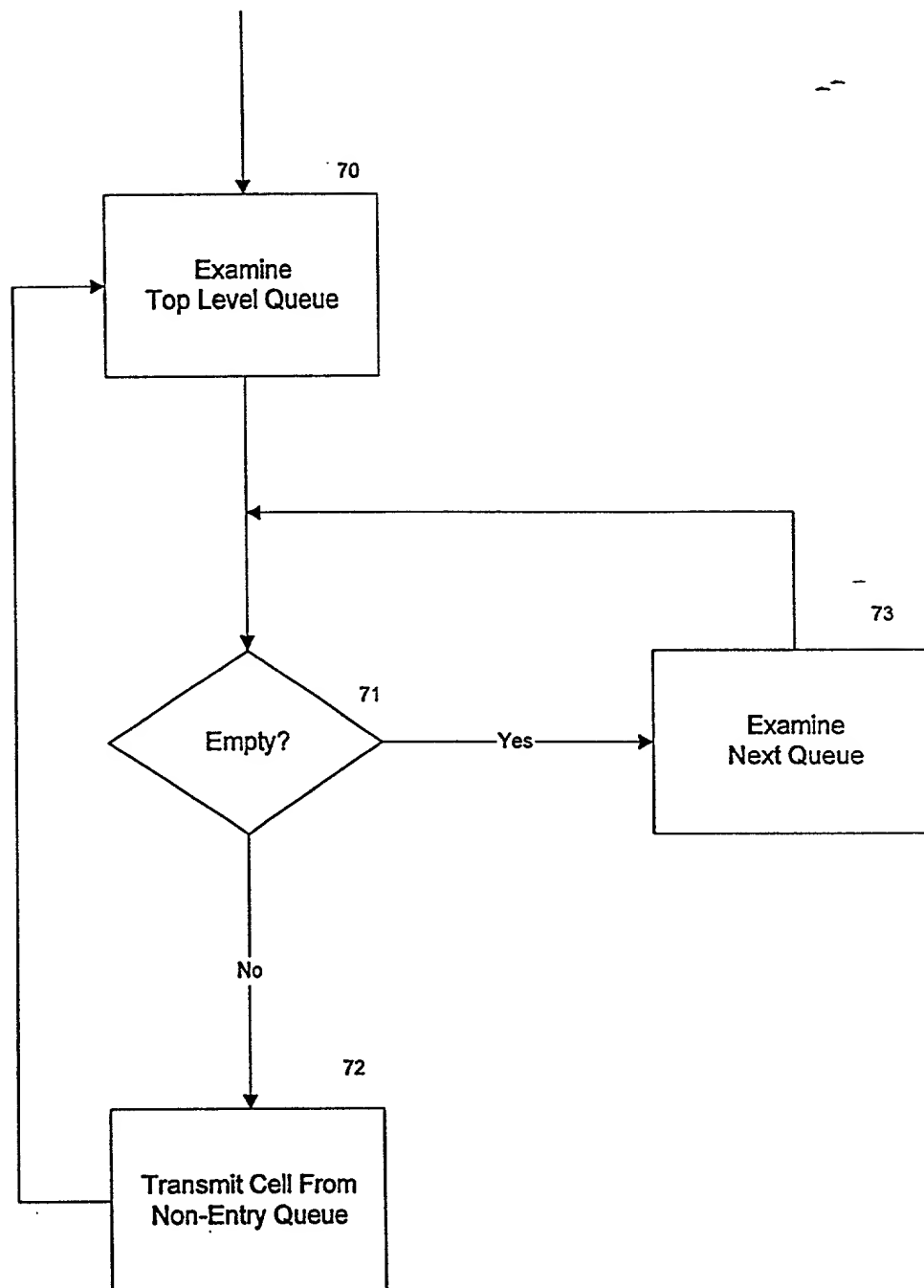


FIG. 7

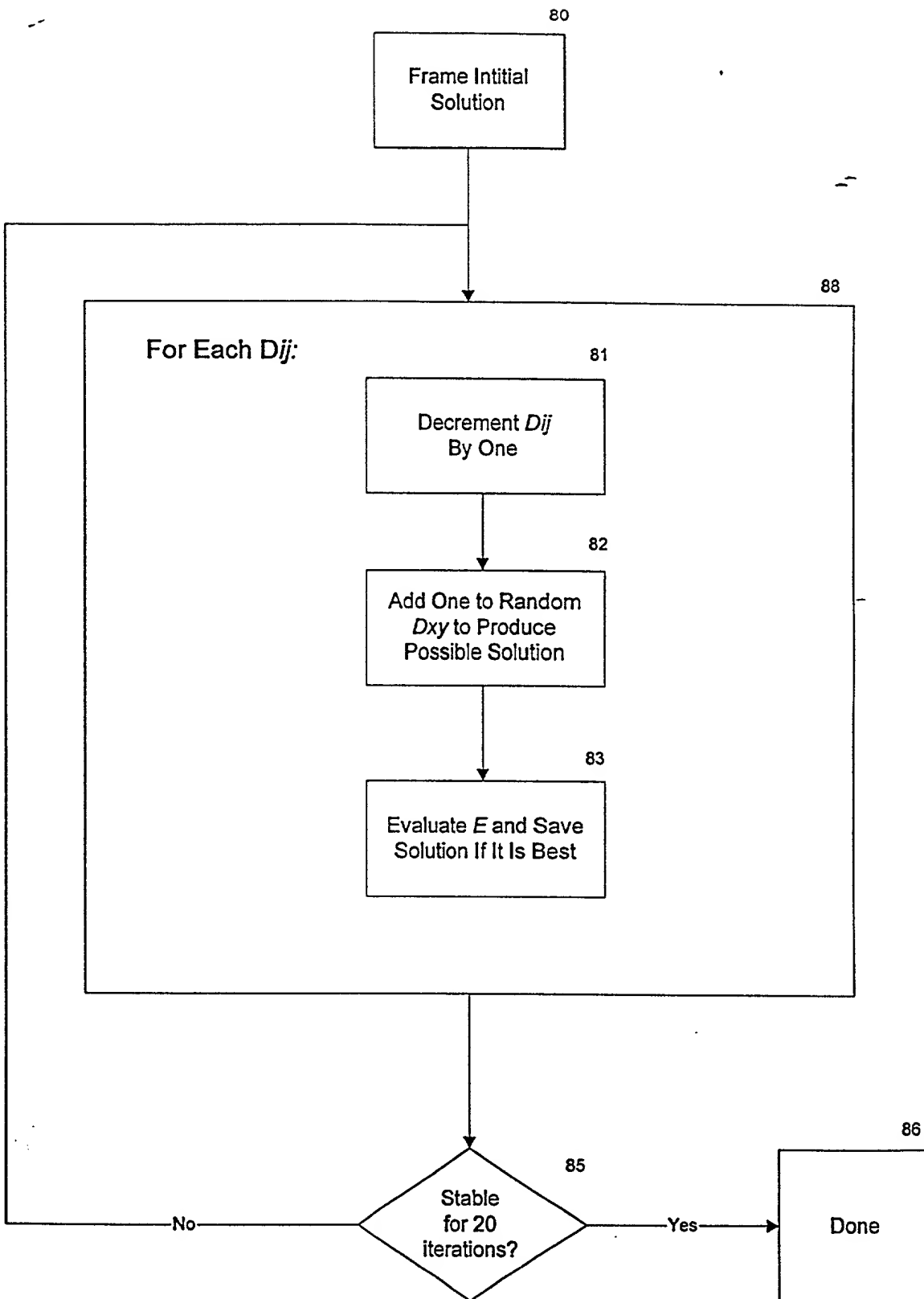


FIG. 8

File Edit View Go Favorites Database Help

File Edit View Go Favorites Database Help

Location: file:///user/abott/levi/doge/sars/hold/qdo/installs/qdo.html

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Queue Depth Optimizer (QDO)

Generate an input file by entering the data below:

Number of similar switches in switch fabric (N, default=1)
1

Number of input & output ports on each switch (M)
6

Number of QoS levels (Q)
2

Total memory available in each switch (Mb)
100

Penalties for dropped cell on each QoS (P)
10.5

Enter P values, separated by a space e.g. "10 5 1"

Penalties for waiting cell on each QoS (Pw)
10.0

Enter Pw values, separated by a space e.g. "10 5 0"

Processing rates for each QoS (mu)
100 50

Enter mu values, separated by a space e.g. "100 50 20 10"

Arrival rates for each queue on every switch (lambda)

Documentation

General Description

The Queue Depth Optimizer (QDO) is a utility which adjusts the depth of queues in a switch (or switches) to minimize the cell drop rate (CDR) and cell wait time (CWT). The depth of all queue depths is always equal to the total amount of available memory in the switch. A queue exists on each output port for each quality of service (QoS) level. The figure below illustrates an example of a switch.

Example: a switch with 4 ports and 2 QoS levels

Input

Two methods are available for giving input to QDO. The user may use a previously generated input file, which can be uploaded to QDO, or the user may enter the data manually using the provided interface. If the input file name is present in the file-name box, QDO will use this file for input. Otherwise, QDO will use the input provided in the text fields. In either case, an input file will be generated and may be retrieved from the output page. This file may be saved for later use.

Here is a brief description of what each of the input fields mean:

N is the number of switches in the fabric. All switches are assumed to be identical in all respects excepting their queue characteristics. If this field is left blank, QDO will assume there is only one switch. This is the only field

Figure 3. The Queue Depth Optimizer GUI

FIG. 9

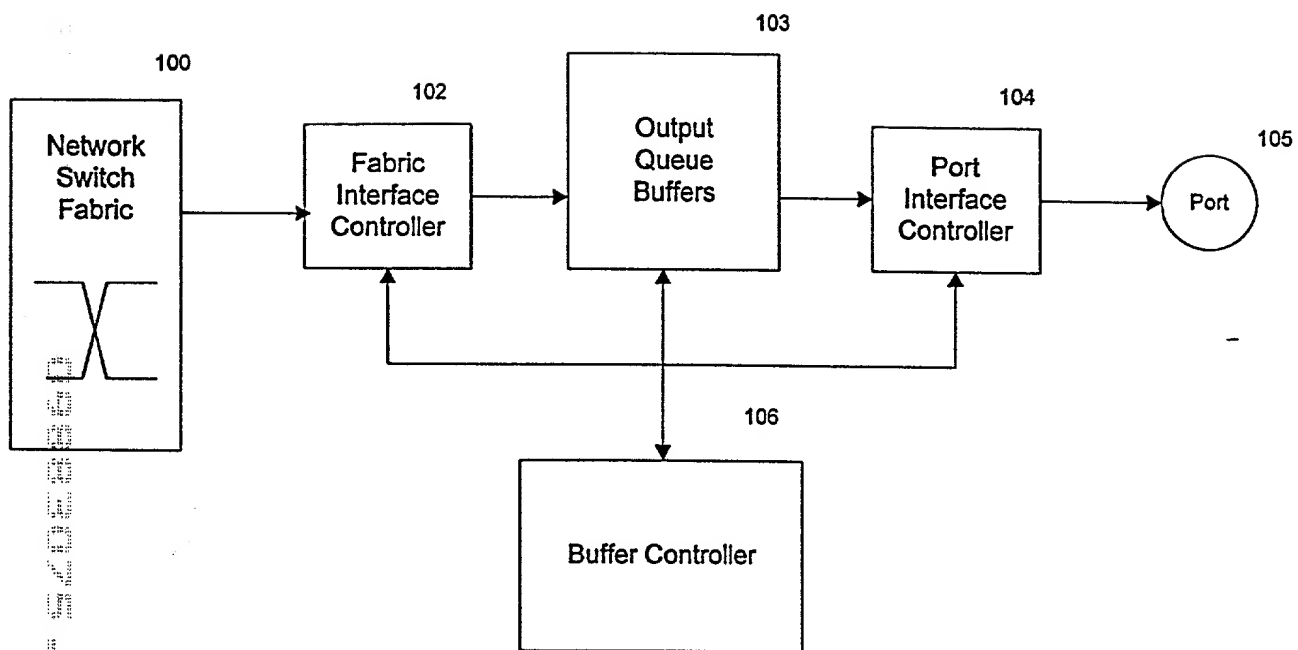


FIG. 10

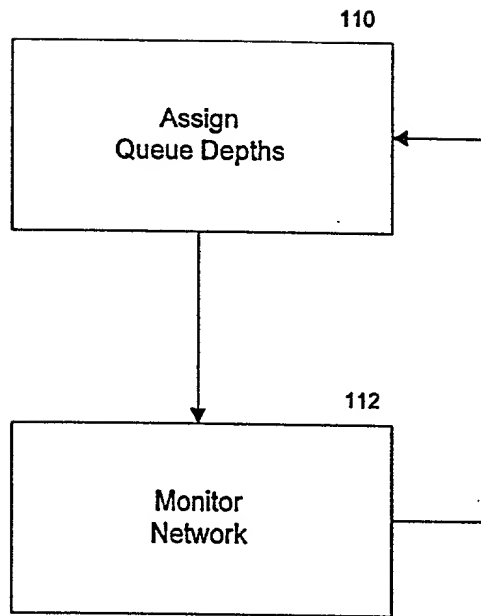


FIG. 11